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CONTROL OF INFECTIOUS DISEASES IN
THE SEVEN-YEAR PLAN

By V. M. Zhdanov

- USSR -

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CONTROL OF INFECTIOUS DISEASES IN THE
SEVEN-YEAR PLAN

Following is the translation of an article by V. M. Zhdanov entitled "Bor'ba s infektsionnymi Boleznyami v Semiletke" (English version above) in Terapevticheskiy Arkhiv (Therapeutic Archives), Vol 32, No 5, Moscow, 1960, pages 3-6.

In the seven-year period which has begun one of the main tasks of the public health organs is a further attack against infectious diseases.

During the course of the next one to 1 1/2 years the elimination of malaria over the entire territory of the USSR should be completed. During the post-war years the malaria morbidity rate decreased rapidly. Thus, while in 1946 3,300,000 cases were recorded, in 1950, only 781,329; in 1955, 35,704; in 1959, less than 1500. A few of its foci were maintained in the AzerbaydzhanSSR, some areas of Central Asia, Kazakhstan and Siberia. The use of bigumal [paludrine] and quinocide [antimalarial aminoquinoline derivative], which in short periods

of time cured 90-95 percent of the patients, and the treatment of inhabited places with stable insecticides of the DDT type were quite effective and rapid-acting agents for elimination of foci of malaria. These measures should be supplemented by the examination of the population in a number of areas so that there should not be even single carriers in case they have not been detected when they came for medical aid. The examination of persons arriving in the USSR from countries where this disease is endemic for malaria assumes importance. All these measures are simple and in their extent cannot in any way be compared with antimalarial work which has been carried out previously.

Public health organs have been confronted with the problem of eliminating diphtheria in the next few years. The experience of a number of cities (Leningrad; Rostov-na-Donu) and even republics (Ukraine) as well as of certain foreign countries (Sweden, England, France) show the actual nature of this task. Thus, in Leningrad for the past several years the diphtheria morbidity rate has been brought down to solitary cases: while in 1950 1,054 cases were recorded in the city, in 1955, 467; in 1959, a total of 21 cases. It should be taken into consideration here that Leningrad is a large city to which many people come

every year from other places. The experience of Moscow also shows how quickly a reduction in the diphtheria morbidity rate may be achieved; here, in the past five years it has been reduced by 11.5 times.

Through what agents have these cities achieved such success? Principally by the proper organization of diphtheria toxoid inoculations among children as well as by the careful diagnosis of cases and antiepidemic work in the foci of diphtheria. The method of work of medical institutions of Leningrad, Rostov-na-Donu, Moscow, other cities and oblasts, which have achieved a rapid elimination of mass cases of diphtheria should be extended to the entire Soviet Union.

Work on the elimination of diphtheria should at the same time lead to a reduction in the pertussis morbidity rate, because children up to four-five years of age are inoculated with the combined diphtheria-pertussis vaccine. Extensive testing of this preparation which has been accomplished in the past three years, has shown that it is quite effective. True, the pertussis component increases the reactivity of the preparation; however, after careful medical examination of children before vaccination and with proper technique of giving the inoculations the most

severe and unpleasant reactions may always be avoided and, at the same time, the maximum number of children can be included. Therefore, inoculation prophylaxis of diphtheria and pertussis should occupy an important place in the activity of the entire medical system. The elimination of diphtheria and the steady reduction in the pertussis morbidity rate will be criteria of the quality of work and the medical institutions.

In past years much has been done in the field of prophylaxis of poliomyelitis and in its control. Along with the improvement in diagnosis and treatment of patients with the use of an apparatus for artificial respiration, which permits saving the lives of persons seriously ill with poliomyelitis and the accomplishment of general sanitary and antiepidemic measures prophylactic inoculations have acquired decisive significance in controlling this serious disease. In all, only 2-2 1/2 years ago the mass production of inactivated vaccine of the Salk type was mastered in the Soviet Union and massive inoculations were begun. During this time more than 15,000,000 children have been vaccinated, primarily in localities with the highest morbidity rate. This has made it possible to stop the increase in the poliomyelitis morbidity rate which began in the 50's.

After mastering the production of the Salk vaccine, Soviet virologists M. P. Chumakov and A. A. Smorodintsev, along with the American virologist A. Sabin have worked persistently to find a vaccine from live attenuated poliomyelitis virus strains, the principle of obtaining which was worked out by A. Sabin. This work has been crowned with success: the vaccine proved to be harmless and highly effective. The value of it, aside from its cheapness, is the simplicity of vaccination -- it can be administered by mouth. In 1959, inoculations of more than 15,000,000 children were given with this vaccine.

In the Baltic republics, where inoculations were performed early -- in the winter and beginning of the spring -- poliomyelitis was practically eliminated. Good results obtained through the extensive testing of vaccine of the Sabin type constituted the basis for giving mass inoculations against poliomyelitis in the country. Throughout 1960, chiefly during the first half year, it has been planned to cover the entire population under 20 years of age with live vaccine inoculations. During the period of the greatest spread of poliomyelitis in the USSR 18,000-22,000 persons became sick with it every year (1957-1958); in 1959, this figure dropped to 13,000. There is

every basis for considering that vaccination of the entire population of the country, at an age where man is susceptible to poliomyelitis, will lead to the elimination of it or at least will reduce the morbidity rate to insignificant figures.

The appearance of new preparations for prophylactic inoculations evokes the need for revising the inoculation periods in childhood. A special conference of European countries convoked by the World Health Organization in October 1959 in the city of Rabat was devoted to this problem. After discussing the experience of European countries in detail, the participants of the conference worked out a system of inoculations for recommendation by national public health services. This system was discussed at the conference for the control of infectious diseases which was held in Moscow in January 1960, where certain additions and corrections were made in it. There is no doubt of the fact that the use of this system will regulate the administration of inoculations in childhood, which is entirely essential for creating an immunity against the most important infectious diseases.

During the course of the seven-year period it has been planned to eliminate other infectious diseases also -- syphilis (fresh

forms), favus, trachoma, ankylostomiasis and taeniarhynchus infestation, rabies, the urban form of cutaneous leishmaniasis, pappataci fever in inhabited areas and other infections which are of local significance. With the exception of syphilis, the morbidity rate from which is also small at the present time, all these diseases are encountered only in certain localities of the country and should be eliminated by the efforts of local public health organs with the active aid of the main administrative organs.

Foci of ankylostomiasis were maintained in certain areas of Georgia, Azerbaydzhan as well as in the mines of Kirghizia and southern Kazakhstan. Elimination of them is possible, and in short periods of time if measures of medical prophylaxis -- the detection and elimination of helminthic infestation of the patients -- is reinforced by sanitary measures directed at safeguarding the soil against fecal contamination. The experience of this work in the mines of Kirghizia (Kyzyl-Kiy) has shown that the comprehensive work rapidly leads to sanitization of foci which are heavily infested with ankylostomiasis. The public health organs of Georgia, Azerbaydzhan, Kirghizia and Kazakhstan have all the conditions needed to eliminate the residual foci of ankylostomiasis

before the end of the current seven-year period.

Trachoma, which previously was widespread in many areas of the country, is now maintained only in limited territories -- in Turkmeniya, the Tatarskaya ASSR and certain other places. Many of the foci which are most heavily infested (Udmurtskaya, Mordovskaya ASSR) have been sanitized. Modern medicine has at its disposal quite effective comprehensive methods of treating patients with the use of antibiotics and subsequent dispensary observation. The task of public health organs of the Turkmeneskaya, Uzbekskaya SSR, Tatarskaya, Yakutskaya ASSR -- is to eliminate the residual foci of this disease.

After the great rabies epizootic in 1951, which was accompanied by an increase in the morbidity rate, it has decreased from year to year, and in 1959 there were only a little more than 100 patients with it. Many localities, previously unfavorable with respect to rabies, are now free of this disease. The use of antirabies -G-globulin along with antirabies inoculations is making it possible to protect people against rabies even in the case of severe bites. To be sure, the main thing is not the antirabies inoculations but rather the systematic annihilation of stray dogs, wolves and jackals, the systematization of maintenance of dogs by

their masters. Prophylactic vaccination of dogs against rabies is also of definite assistance. The main weight of prophylaxis lies on veterinary workers, militia and community organs. The public health organs of the Donbass, North Caucasus and the UzbekSSR and other territories, where rabies is encountered, should see that the local soviets

make the necessary decisions providing for the elimination of rabies epizootics and establish effective control over their realization.

In the current seven-year period definite measures should be accomplished for the further reduction of the typhoid fever morbidity rate, and the morbidity from dysentery and other acute intestinal diseases, brucellosis, and tuberculosis. The prophylactic system against these infections used at the present time has already provided for a reduction in the morbidity rate. It is now essential to accelerate the tempos of further reduction in it.

Let us dwell on dysentery and other acute intestinal diseases. It may be considered firmly established that the etiologic structure of them is inhomogeneous. As before, dysentery is of considerable significance among them. Among young children, I

daresay, the *B. coli* enteritides occupy the main place. Among the other etiologic forms note should be made of the salmonelloses. A considerable part of these diseases remains unclarified, but, undoubtedly, the majority of them are of an infectious nature.

In the middle 50's the prophylactic system against acute intestinal diseases was radically reorganized. The main attention was shifted to treating patients with subsequent dispensary observation of them, the accomplishment of measures for the sanitization of foci, sanitary education of the population. These measures have completely justified themselves: the taking of these measures has provided a steady reduction in the morbidity rate from acute intestinal diseases during the past five years. Therefore, it is necessary to improve even further the quality of therapeutic work and antiepidemic measures in foci, differentiating these measures as applied to etiologic forms of acute intestinal diseases (dysentery, *B. coli* enteritis, salmonellosis). This is of particular significance for the work of the pediatric service: proper feeding of children, care of them and physical education are playing a decisive part in the prophylaxis of acute intestinal disorders. The further increase in the public welfare and the unprecedented extent of community housing construction are

creating favorable conditions for the successful control of intestinal diseases.

The most widespread diseases require definite attention, for the successful control of which medical science has not yet worked out radical agents. Among them are influenza, sore throat, measles, epidemic hepatitis. Naturally, it is still premature to speak not only of their elimination but also of the marked reduction of them. A more actual problem is limitation of the increase in the morbidity rate, control of epidemic outbreaks, reduction in the mortality rate, and improvement in the quality of treatment of patients.

The public health organs are better equipped, I daresay, for controlling influenza. For many years now prophylactic vaccines and therapeutic-prophylactic sera have been used. Unfortunately, the quality of the preparations which are being serially produced, the volume and quality of the inoculations are far from perfection, and the low degree of effectiveness of specific influenza prophylaxis in various years has repeatedly caused disappointment among practical workers. Therefore, it is necessary first of all to improve the quality of influenza vaccines and sera, give them in time, as well as organize their use properly so as gradually to

increase the volume of prophylactic inoculations against influenza and use influenzal serum more extensively for the treatment of patients and protection of contacts.

For the purpose of controlling measles γ -globulin is of great importance; in the current year this will completely replace the donor serum used previously. Although γ -globulin only temporarily prevents the development of measles or mitigates its course, it remains an important measure for controlling measles, reducing the mortality rate among very young children and preventing complications. This limited but important problem remains a basic one until effective measles vaccines are found. There is basis for the hope that they will be found in the next few years.

Therefore, in controlling sore throats, influenza, measles, epidemic hepatitis and scarlet fever the main part should be played by general therapeutic-prophylactic measures supplemented by specific prophylaxis. With respect to measles and influenza a concentration of efforts is needed on the part of medical science in the matter of looking for effective prophylactic and therapeutic agents. The example of poliomyelitis shows that purposeful investigations are making it possible to achieve a

rapid solution of the problem, which hitherto has appeared unsolvable.

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